

SERIAL NO: 10/034,438
AMDT DATED OCT. 4, 2005
REPLY TO OFFICE ACTION OF 5 JULY 2005

II. REMARKS

A. General Remarks

Claims 18-42 are pending.

B. Claims 18-21, 25-27 & 31-33 and Claims 28-30 & 34 Are Not Anticipated by Iyer et al.

In paragraphs 1-10 of the Office Action, claims 18-21, 25-27, and 31-33 stand rejected under 35 U.S.C. 102(e) as allegedly being anticipated by Iyer et al. (US 6,411,964). However, the status of claims 28-30 and 34 is not clear. The rejection of claims 28-30 and 34 falls under the rejection headings for 35 U.S.C. 103 but relies on the rejections made previously to claims 18-21, 25-27, and 31-33 under 35 U.S.C. 102. See Office Action at paragraph 13, page 7.

Clarification of the rejections are requested.

Nevertheless, Applicant respectfully traverses the rejection of claims 18-21, 25-27, 28-30, 31-33, and 34 as currently understood in so far as independent claims 18 and 28 are not anticipated by Iyer et al.

Iyer et al. is directed to providing in-place reorganization of a database, which Iyer et al. discloses as a partitioned tablespace and a non-partitioned tablespace. Iyer et al. states that "[p]artitions reside in different files; a non-partitioned table 108 space can reside in one file." *Iyer et al.* at col. 6, lines 51-52. Thus, one partition resides in one file. Similarly, a non-partitioned tablespace resides in one file. With this understanding, *Iyer et al.'s disclosure is directed to distributing free space evenly in the same file (e.g., a file for a partition of a partitioned tablespace or a file for a non-partitioned tablespace).* See *e.g.*, Iyer et al. at col. 3, lines 47-50 and col. 7, lines 25-27. Furthermore, Iyer et al. discloses free space parameters for reorganization, which include "desired frequency of free pages" and "desired percent of free space per page." See *e.g.*, Iyer et al. at col. 17, lines 51-52. If free pages are distributed in one file for a partition of a tablespace or in one file for a non-partitioned tablespace according to a "desired frequency of free pages" or a "desired percent of free space per page," then the free space in that one file will be evenly distributed, which is what Iyer et al. is expressly directed to and which is not what Applicant has claimed.

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In fact, Iyer et al. describes uneven distribution of free space as a type of degradation that can cause poor performance. See Iyer et al. at col. 7, lines 12-15. Reorganization in accordance with *Iyer et al. is purposefully designed to remove such structural degradation such that free space is evenly distributed throughout a tablespace* (Iyer et al. at col. 7, lines 24-27). Thus, Iyer et al. teaches the use of free space parameters such as desired frequency of free pages and desired percent of free space per page to *uniformly manage the free space in one file (e.g., in one partition of a partitioned tablespace or in an entire non-partitioned tablespace* (Iyer et al. at col. 17, lines 49-60 and FIG. 11, element 1126).

In contrast to Iyer et al., the claimed invention is directed to the *non-uniform management of free space* in a database. For example, claims 18 and 28, as amended, both recite that "the second values differ from the first values by at least one free space management parameter value, *thereby producing non-uniform distribution of free space in the database file.*" In both claims 18 and 28, first and second key ranges are identified for first and second sets of rows in the same database file. First and second values are assigned to free space parameters for both key ranges. The second values differ from the first values by at least one free space management parameter value. The free space in the first rows associated with the second set of rows is managed in accordance with the first values, while the free space associated with the second set of rows in accordance with the second values. Thus, the management of free space in the first set of rows in the database file is different from the management of free space in the second set of rows in the same database file, thereby producing non-uniform distribution of free space in the same database file. Thus, *free space management in accordance with the claimed invention results, by definition, in non-uniform distribution of free space in the same database file* because the free space of at least two different key ranges of the same database file are treated differently.

At no time does Iyer et al. teach that a file's free space may be treated non-uniformly. At no time does Iyer et al. even suggest that such an operation may be beneficial. In fact, Iyer et al. *expressly* teaches that the non-uniform management of free space is a type of "degradation" that can lead to poor performance (see discussion above). Accordingly, not only does Iyer et al. *not teach* the claimed invention, Iyer et al. actually teaches away from the claimed invention.

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In light of the above amendments and remarks, claims 18-21, 25-27, 28-30, 31-33, and 34 are believed to be clearly distinguished from Iyer et al. Accordingly, Assignee respectfully requests the Examiner's section 102 rejections be withdrawn and claims 18-21, 25-27, 28-30, 31-33, and 34 be passed to allowance.

C. The Status of Claims 35-38 and 39-42 Is Unclear in the Office Action

The status of claims 35-38 and 39-42 is not clear in the Office Action. Independent claim 35 has been rejected under 35 U.S.C. 103(a) to Iyer et al. in view of Eberhard et al. because the rejection of claim 35 appears in paragraph 12 along with the 103(a) rejections of claims 23-24. *See* Office Action at paragraph 12, pages 6-7. However, claims 36-38, which depend from claim 35, are apparently rejected to Iyer et al. alone under 35 U.S.C. 102. *See* Office Action at paragraphs 14-16, pages 7-8. Furthermore, the rejection of claims 39-42 falls under the rejection headings for 35 U.S.C. 103 but relies on the rejections made previously to claim 35 (which is apparently under section 103) and to claims 36-38 (which are apparently under section 102). *See* Office Action at paragraph 17, page 8.

Due to these uncertainties, Assignee is unable to determine the status of these claims. Assignee respectfully requests that the next paper from the Office set forth the status of these claims and that the next Office Action not be made Final for this reason.

Nevertheless, Assignee wishes to move claims 35-38 and 39-42 to allowance, and Assignee therefore responds to the rejections in the Office Action as currently understood. Claims 35-38 and 39-42 are not anticipated by Iyer et al. nor are they rendered obvious over Iyer et al. in view of Eberhard et al.

Independent claim 35 is directed to a database free space management method and recites *"non-uniformly distributing free space within the first and second sets of rows of the file object by distributing free space differently for the first range of key values than for the second range of key values."* Similarly, independent claim 39 is directed to a program storage device comprising instructions stored for causing the programmable control device to *"distribute free space differently for the first range of key values than for the second range of key values to non-uniformly distribute free space within the first and second sets of rows of the same file object."*

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As discussed previously, at no time does Iyer et al. teach that a file's free space may be treated non-uniformly. Rather, Iyer et al.'s disclosure is directed to distributing free space evenly in the same file, as also discussed previously. Therefore, claims 35-38 and 39-42 cannot be anticipated by Iyer et al.

As discussed previously, Iyer et al. also expressly teaches away from uneven distribution of free space. *See* Iyer et al. at col. 7, lines 12-15. It is recognized that "[i]t is improper to combine references where the references teach away from their combination." MPEP 2145(X)(D)(2) *citing In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983). Accordingly, it would be improper to combine Iyer et al. with another reference to justify uneven distribution of free space because Iyer et al. teaches away from such a combination. Moreover, Eberhard et al., which has been combined with Iyer et al., is directed to a software tool that estimates costs of an application program accessing a database and that specifies "the percent of free space left on a page" (222; Fig. 2C). *See* Abstract and col. 8, line 31-32. In other words, Eberhard et al. discloses a tool that specifies the percent free space left on a page. Thus, Eberhard et al. does not provide any limitations missing from Iyer et al. directed to non-uniform distribution of free space in a file by managing key range values according to different parameters. Therefore, Iyer et al. in view of Eberhard et al. cannot render claims 35-38 and 39-42 obvious.

D. Claim 23-24 Are Not Obvious over Iyer et al. in view of Eberhard et al.

In paragraphs 11-12, claims 23-24 stands rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Iyer et al., and further in view of U.S. Patent 6,003,022 to Eberhard et al. (hereinafter Eberhard). Even if combining Iyer et al. in view of Eberhard were appropriate, which Applicant does not concede, the combination fails to disclose all of the limitations of independent claim 18 from which claims 23-24 depends. Accordingly, Assignee respectfully requests allowance of claims 23-24 in the next paper from the Office.

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CONCLUSION

Reconsideration of the pending claims 18-42 in light of the above remarks and amendments is respectfully requested. If, after considering this reply, the Examiner believes that a telephone conference would be beneficial towards advancing this case to allowance, the Examiner is strongly encouraged to contact the undersigned attorney at the number listed.

October 4, 2005
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